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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,049	07/15/2003	Heng Liu	LIU1.PAU.03	8846

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EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/621,049

Applicant(s)

LIU, HENG

Examiner

Ram N. Kackar

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 161-164 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 161-164 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date (2) 5/26/05 & 2/14/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 161, 163 and 164 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jurgensen et al (WO 02/18672 or US 2003/0221624) in view of Hirooka et al (US 4798166).**

Jurgensen et al disclose a CVD coating device having a rotatable wafer carrier (Fig 1 and paragraph 7) to process a plurality of substrates (*disclosed number is 5*) sealed at a periphery to facilitate laminar flow (Fig 1), bottom of the chamber defined by the carrier (Fig 1-3), heater outside the chamber (19) to heat the carrier, gas inlet located centrally (26) and gas outlets above the carrier (25), a shaft for rotating the wafer carrier (23), a small distance from carrier to the cover (Fig 1) and a graphite discharge ring (Col 1 lines 8-13).

Jurgensen et al do not disclose that chambers like above may be connected to a common gas inlet structure for increased throughput.

Hirooka et al disclose a deposition system having multiple chambers connected in parallel to a common source of gas (Fig 1) and disclose several ways of connecting gas supplies.

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Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to connect plurality of smaller sized similar chambers to common gas supply as in Hirooka et al for increased throughput.

Furthermore duplication of parts for mere increase of throughput is held to have been obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

Regarding claim 164 reciting seven wafers in a reactor, increasing the number from 5 to 7 merely to increase throughput would have been obvious.

3. Claims 161-164 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jurgensen et al (WO 02/18672 or US 2003/0221624) in view of Rocha-Alvarez et al (US 4798166).

Jurgensen et al disclose a CVD coating device having a rotatable wafer carrier (Fig 1 and paragraph 7) to process a plurality of substrates (*disclosed number is 5*) sealed at a periphery to facilitate laminar flow (Fig 1), bottom of the chamber defined by the carrier (Fig 1-3), heater outside the chamber (19) to heat the carrier, gas inlet located centrally (26) and gas outlets above the carrier (25), a shaft for rotating the wafer carrier (23), a small distance from carrier to the cover (Fig 1) and a graphite discharge ring (Col 1 lines 8-13).

Jurgensen et al do not disclose that chambers like above may be connected to a common gas inlet structure for increased throughput.

Rocha-Alvarez et al disclose a plurality of small chambers connected to common gas supply and exhaust for increased throughput (Fig 4, Fig 5, Col 3 lines 47-54 and Col 9 lines 43-45).

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Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to connect plurality of smaller sized similar chambers to common gas supply and exhaust for increased throughput and economy specially for similar process in each chamber.

Response to Arguments

Applicant's arguments filed 6/28/05 have been fully considered but they are not persuasive.

Applicant argues that in Hirooka et al each chamber forms a portion of the final multilayer product. Thus it is necessary to move wafers from one chamber to another. Applicant further argues that by way of contrast the invention chambers substantially use same gas mixture.

Examiner's position is that the way plurality of chambers are connected in Hirooka et al, it is possible to have same gas mixture going to all chambers. Therefore Hirooka et al in combination with Jurgensen et al reads on the claim.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N. Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571 272 1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ram Kackar
Examiner AU 1763